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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/450,768	11/30/1999	OSAMU KUBONIWA	MA-385-US	8157

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MCGINN & GIBB PC  
1701 CLARENDON BOULEVARD STE 100  
ARLINGTON, VA 22209

[REDACTED] EXAMINER

SWICKHAMER, CHRISTOPHER M

ART UNIT	PAPER NUMBER
2697	

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/450,768	<b>Applicant(s)</b> KUBONIWA, OSAMU
	<b>Examiner</b> Christopher M Swickhamer	<b>Art Unit</b> 2697

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
**THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 November 1999 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
  - a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 112*

3. Claims 1-6 recites the limitation "the data" in Claim 1, line 8-9 on page 20, which also appears in Claims 3 and 5. There is insufficient antecedent basis for this limitation in the claim.

4. Claims 7-12 recites the limitation "the data" in Claim 7, line 36 on page 24, which also appears in Claims 9, 11, and 12. There is insufficient antecedent basis for this limitation in the claim.

5. Claims 7-12 recites the limitation "the analog telephone network" and "the high-speed digital data network" in Claim 7, lines 30-32 on page 24. There is insufficient antecedent basis for this limitation in the claim.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5-8, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng (US Patent No. 6,259,708) in view of Phillips (US Patent No. 6,243,377). Referring to Claim 1, Cheng discloses an ADSL system for transferring an analog audio signal of a voiceband device (analog communication equipment) and high speed digital data of high speed digital data equipment provided on the side of a subscriber, from and to a central office (station), through one subscriber line (Fig. 1, col. 2, Ins. 45-54), comprising: an apparatus on the subscriber side in which an analog audio signal of the analog communication equipment is converted into a digital audio signal by the digital voice band circuit (Fig. 2, col. 4, Ins. 65-col. 5, Ins. 3, col. 6, Ins. 53-61), the data together with the high-speed digital data is combined with the DSL data stream (col. 4, Ins. 44-55), and supplied to the subscriber line after being modulated by an ADSL modem (Fig. 1, col. 4, Ins 50-55), while after a signal received from the station through the subscriber line is demodulated by an ADSL modem (Fig. 1), the digital audio signal is converted in an analog audio signal by the digital voice band circuit and supplied to the voiceband device (analog communication equipment, Fig. 1, col. 4, Ins. 53-68, col. 5, Ins. 55-63), and at the same time high-speed digital data is supplied to a high-speed digital data equipment (col. 5, Ins. 45-55); and an apparatus on the station side in which a signal received from said apparatus on the subscriber side through the subscriber line is demodulated by the

ADSL modem (Fig. 1), thereafter the digital audio signal is converted into an analog audio signal by the digital voice band circuit (Fig. 5, Ins. 55-63), which is supplied to an analog telephone network (col. 5, Ins. 28-31), and at the same time high-speed digital data is supplied to a high-speed digital data network (col. 5, Ins. 21-25), while an analog audio signal of the analog telephone network is converted into a digital audio signal (col. 6, Ins. 43-68), the data together with high-speed digital data of the high-speed digital data network is combined with the DSL data stream, and supplied to the subscriber line after being modulated by the ADSL modem (Fig. 1, col. 2, Ins. 25-54). Cheng does not expressly disclose that the voice signal and DSL data stream are concentrated on lines in a way of time division. Phillips discloses a system where voice and digital data are concentrated by time division multiplexing and sent over a DSL subscriber line (Fig. 4, col. 2, Ins. 25-51). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use time division multiplexing to combine the voice and digital data for the system developed by Cheng. One of ordinary skill in the art would have been motivated to do this since it allows for a single telephone line to be used for simultaneous data and/or voice related calls (col. 1, Ins. 29-44).

- Referring to Claim 2, Cheng and Phillips disclose an ADSL system as set forth in Claim 1, wherein said apparatus on the subscriber side converts each analog audio signal of at least one voiceband device (a plurality of analog communication equipment) into each digital audio signal and concentrates the data together with high-speed digital data on lines in a way of time division (see reference to Claim 1, col. 2, Ins. 25-54).

- Referring to Claim 5, Cheng and Phillips disclose an ADSL system as set forth in Claim 1, wherein said apparatus on the subscriber side and apparatus on the station side time division

multiplex (divide each) digital audio signal as well as high-speed digital data (into fixed time slots) and the data is supplied to the subscriber line after being modulated by the ADSL modem (see reference to Claim 1, Fig. 1, col. 4, Ins. 44-55).

- Referring to Claim 6, Cheng discloses an ADSL system as set forth in Claim 1, wherein said apparatus on the subscriber side converts the analog audio signal from at least one voiceband device (each analog audio signal of a plurality of analog communication equipment) into each digital audio signal and concentrates the data together with high-speed digital data on lines in a way of time division (see reference to Claim 1), and said apparatus on the subscriber side and apparatus on the station side (divide each) time division multiplex the digital audio signal as well as high-speed digital data (into fixed time slots) and the data is supplied to the subscriber line after being modulated by the ADSL modem (Fig. 1, col. 2, Ins. 41-54).

- Referring to Claim 7, Cheng discloses an ADSL system for transferring an analog audio signal of analog communication equipment and high speed digital data of high speed digital data equipment provided in an apparatus on a subscriber side, from and to an apparatus on a central office (station) side, through one subscriber line (Fig. 1, col. 2, Ins. 24-54), in which said apparatus on the subscriber side comprises an AD/DA converter for converting an analog audio signal of the voiceband device (analog communication equipment) into a digital audio signal or converting a digital audio signal into an analog audio signal (Fig. 2, col. 6, Ins. 43-61), hence to supply the same to the voiceband device (analog communication equipment), and supplying the high-speed digital data to the high-speed digital data equipment (col. 5, Ins. 45-55), a DSL compliant device (line concentrator) for concentrating the digital audio signal and the high-speed digital data on lines (col. 2, Ins. 40-54), and an ADSL modem for modulating the digital audio

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signal and the high-speed digital data and supplying the modulated signal to the subscriber line, and demodulating a modulated signal received from the station side through the subscriber line (Fig. 1, col. 2, Ins. 25-40), while said apparatus on the station side comprises an ADSL modem for demodulating the modulated signal received from said apparatus on the subscriber side through the subscriber line and modulating a digital audio signal and high-speed digital data to be supplied to the subscriber line (Fig. 1, col. 2, Ins. 25-40), and DSL compliant device (a line concentrator) for supplying the digital audio signal modulated by said ADSL modem to the analog telephone network (Fig. 1, col. 5, Ins. 28-31) as well as supplying the high-speed digital data to the high-speed digital data network (col. 5, Ins. 20-25), and concentrating the digital audio signal from the analog telephone network and the high-speed digital data from the high-speed digital data network, then to send the data to said ADSL modem (Fig. 1, col. 2, Ins. 25-54). Cheng does not expressly disclose that time division concentrates the digital and digitized analog signals. Phillips discloses a system where voice and digital data are concentrated by time division multiplexing and sent over a DSL subscriber line (Fig. 4, col. 2, Ins. 25-51). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to use time division multiplexing to combine the voice and digital data for the system developed by Cheng. One of ordinary skill in the art would have been motivated to do this since it allows for a single telephone line to be used for simultaneous data and/or voice related calls (col. 1, Ins. 29-44).

- Referring to Claim 8, Cheng and Phillips disclose an ADSL system as set forth in Claim 7, wherein said apparatus on the subscriber side comprises a plurality of the above-mentioned AD/DA converters (Fig. 2, col. 6, Ins. 43-61) corresponding to at least one voiceband device ( a

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plurality of analog communication equipment, col. 2, lns. 25-40), and said time division multiplexer (line concentrator, see reference to Claim 7) in said apparatus on the subscriber side multiplexes (concentrates) on lines each digital audio signal converted by the plurality of AD/DA converters, together with high-speed digital data (Fig. 2, col. 6, lns. 43-61).

- Referring to Claim 11, Cheng discloses an ADSL system as set forth in Claim 7, wherein said multiplexers (line concentrators) in said apparatus on the subscriber side and in said apparatus on the station side time multiplex (divide each, see reference to Claim 7) digital audio signal and high-speed digital data into fixed time slots, and the data is supplied to the subscriber line after being modulated by said ADSL modem (Fig. 1, col. 4, lns. 30-55).

- Referring to Claim 12, Cheng and Phillips disclose an ADSL system as set forth in Claim 7, wherein said apparatus on the subscriber side comprises a plurality of the above-mentioned AD/DA converters corresponding at least one voiceband device (to a plurality of analog communication equipment, col. 2, lns. 25-40), and said multiplexers (line concentrators) in said apparatus on the subscriber side and in said apparatus on the station side time multiplex (divide each) digital audio signal and high-speed digital data into fixed time slots (see reference to Claim 7), the data is supplied to the subscriber line after being modulated by said ADSL modem (col. 4, lns. 30-54).

8. Claims 3-4, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng and Phillips, in further view of Kaplan (US Patent No. 6,141,339). Referring to Claim 3, Cheng and Phillips disclose an ADSL system as set forth in Claim 1, and time division multiplex the data on lines (see reference to Claim 1, Fig. 1 & 2, col. 2, lns. 25-40), but do not expressly disclose the said apparatus on the subscriber side and apparatus on the station side convert each

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digital audio signal as well as high-speed digital data into ATM cells, attach each destination address to the ATM cells. Kaplan discloses a system that converts voice and digital data into ATM cells with VPI/VCI information (destination addresses) for transmission over an ADSL connection (col. 3, Ins. 40-49, col. 8, Ins. 20-41). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the voice and digital data transmission system of Phillips and Cheng with a system that converts the data to ATM cells before transmission over an ADSL connection. One of ordinary skill in the art would have been motivated to do this since it allows voice and data in ATM format to be provided for broadband transport to the residence over a DSL connection (col. 1, Ins. 21-53)

9. Referring to Claim 4, Cheng and Phillips disclose an ADSL system as set forth in Claim 1, wherein said apparatus on the subscriber side converts at least one voiceband device (each analog audio signal of a plurality of analog communication equipment) into each digital audio signal and time division multiplexes (concentrates, see reference to Claim 1) the data together with high-speed digital data on lines in a way of time division (col. 2, Ins. 25-40). Cheng and Phillips do not expressly disclose said apparatus on the subscriber side and apparatus on the station side convert each digital audio signal as well as high-speed digital data into ATM cells, attach VPI/VCI (each destination address) to the ATM cells. Kaplan discloses a system that converts voice and digital data into ATM cells with VPI/VCI information (destination addresses) for transmission over an ADSL connection (col. 3, Ins. 40-49, col. 8, Ins. 20-41). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the voice and digital data transmission system of Phillips and Cheng with a system that converts the data to ATM cells before transmission over an ADSL connection. One of ordinary skill in the art

would have been motivated to do this since it allows voice and data in ATM format to be provided for broadband transport to the residence over a DSL connection (col. 1, Ins. 21-53).

10. Referring to Claim 9, Cheng and Phillips disclose an ADSL system as set forth in Claim 7, wherein said multiplexers (line concentrators) in said apparatus on the subscriber side and in said apparatus on the station side multiplex (concentrate) the data on lines (see reference to Claim 7, Fig. 1 & 2, col. 2, Ins. 25-40). Cheng and Phillips do not expressly disclose the apparatus converts digital audio signals and high-speed digital data into ATM cells, and attach VPI/VCI information (each destination address) to the ATM cells. Kaplan discloses a system that converts voice and digital data into ATM cells with VPI/VCI information (destination addresses) for transmission over an ADSL connection (col. 3, Ins. 40-49, col. 8, Ins. 20-41). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the voice and digital data transmission system of Phillips and Cheng with a system that converts the data to ATM cells before transmission over an ADSL connection. One of ordinary skill in the art would have been motivated to do this since it allows voice and data in ATM format to be provided for broadband transport to the residence over a DSL connection (col. 1, Ins. 21-53)

11. Referring to Claim 10, Cheng and Phillips disclose an ADSL system as set forth in Claim 7, wherein said apparatus on the subscriber side comprises a plurality of the above-mentioned AD/DA converters corresponding to at least one voiceband device (a plurality of analog communication equipment, Fig. 1 & 2, col. 2, Ins. 25-40), and said multiplexers (line concentrators) in said apparatus on the subscriber side and in said apparatus on the station side multiplex the data on the line (see reference to Claim 7). Cheng and Phillips do not expressly

discloses the remote terminal and central office apparatus convert digital audio signals and high-speed digital data into ATM cells, attach VPI/VCI information (each destination address) to the ATM cells. Kaplan discloses a system that converts voice and digital data into ATM cells with VPI/VCI information (destination addresses) for transmission over an ADSL connection (col. 3, lns. 40-49, col. 8, lns. 20-41). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the voice and digital data transmission system of Phillips and Cheng with a system that converts the data to ATM cells before transmission over an ADSL connection. One of ordinary skill in the art would have been motivated to do this since it allows voice and data in ATM format to be provided for broadband transport to the residence over a DSL connection (col. 1, lns. 21-53)

### *Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- DeNap et al, US Patent No. 6,407,997. *Asynchronous Transfer Mode System for Providing Telephony Service.*
- Hamdi, US Patent No. 6,205,124. *Multipoint Digital Simultaneous Voice and Data System.*
- Seaholtz et al, US Patent No. 6,246,695. *Variable Rate and Variable Mode Transmission System.*
- Jenness, US Patent No. 6,404,774. *Method using Low Spectrum Selectively for Providing both ADSL and POTS Service.*

- Sharper et al, US Patent No. 6,141,377. *Method and Apparatus for Voice Frequency Noise Reduction in Splitterless ADSL.*
- Eames, US Patent No. 6,282,189. *Unified Access Platform for Simultaneously Delivering Voice and Cell-Based Services.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M Swickhamer whose telephone number is (703) 306.4820. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305.4798. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308.9571 for regular communications and (703) 827.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305.3900.

CMS  
December 31, 2002



RICKY NGO  
PRIMARY EXAMINER